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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,401	04/19/2000	LARS ANDERSSON	P65317US0	3747

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EXAMINER

NGUYEN, HOAN C

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 09/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/529,401

Applicant(s)

ANDERSSON, LARS

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/14/02 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the combination of features of a sheet-like supports (1), a layer of liquid thermochromic crystals (2), individual heatable elements (3) and cooling means (4) and coating (5) covering the liquid thermochromic crystals in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR

Art Unit: 2871

Specification

DEVELOPMENT.

- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
- (1) Field of the Invention.
- (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Appropriate correction is required. No new matter should be entered.

Claim Objections

1. Claim 1 is objected to because of the following informalities:
- "the crystals" in lines 5, 6, 8, 15 and 17 should be the liquid thermochromic crystals;
 - "said wanted design" in line 13 should be said design
 - "the thermochromic crystals" (the liquid thermochromic crystals?) in line

Appropriate correction is required.

2. Claims 2 and 4 are objected to because of the following informalities: The following limitations are lack antecedent basis:

- "the underlying means" in claim 2;
- "the coat of lacquer" in claim 4

. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the combination of features of a sheet-like supports (1), a layer of liquid thermochromic crystals (2), individual heatable elements (3) with individual power supply and cooling means (4) and coating (5) covering the liquid thermochromic crystals. In another words, how to combine the cooling means (4) in Fig. 3 to Figure 2.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by O'Brian (US4142782) from applicant's IDS.

In regard to claim 1, O'Brian teaches (Fig. 5) a display device consisting of a sheet-like support (402) which is covered with a layer of liquid thermochromic crystals (410, 412, 414, these elements are modified from elements 18, 20, 22 and 24 in Fig. 1 in the same invention), which are separately tempered by individual power supply to individual heatable elements (406), which lie close to the crystals and are placed between the sheet-like support (402) and the liquid thermochromic crystals (410, 412, 414)), whereby the crystals assume different shades of color dependent on the given temperature (col. 4 line 68 to col. 5 line 3 or in abstract) so that hereby the colour of the crystals will form a certain pattern (Figs. 1 and 4) and hereby a figure characterized by that the liquid thermochromic crystals are distributed over the complete layer without a specific pattern and that the design of the figure is determined only by tempering the small heatable elements (406), which are located according to said design and by that the support includes cooling means as the result of ambient temperature changes (col. 3 lines 51-55) which are controlled to cool down the crystals (2) and/or keep the support (1) of the crystals at a certain temperature, which is lower than the temperature, at which the crystals are coloured and whereat the crystals are covered by a coating.

In regard to claim 2 and 6, O'Brian teaches (Fig. 5) a display device characterized in that the underlying means consists of peltier elements (406 using as

Art Unit: 2871

heat transfer elements), which are black (since peltier elements made of carbon particles in an organic binder) and are supplied by electricity with wires 420 in order to set their temperature (col. 4 lines 64-67).

In regard to claim 3, O'Brian teaches (Figs. 1-5, col. 3 lines 33-37) a display device characterized in that the liquid thermochromic crystals are painted on the peltier elements.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brian (US4142782) as applied to claim 1 above in view of Sheets (US6017594A).

Sheets teaches (col. 2 lines 39-54) a display device with coating of lacquer is a plain lacquer, which consists of an acryl base and a synthetic agent (which is conventional substance for binding the acryl polymeric base) for improving respond speed and preventing scratching effect to reduce appearance.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a display device as O'Brian disclosed with coating of lacquer is a plain lacquer, which consists of an acryl base and a

synthetic agent (which is conventional substance for binding the acryl polymeric base) for improving respond speed and preventing scratching effect to reduce appearance.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brian (US4142782) as applied to claim 1 above in view of Sheets (US6017594A) as applied to claim 4 above, and further in view of Jung et al. (US5283290A).

Jung et al. teach (in abstract and col. 8 lines 4-68) a display device having coating or lacquer with the mixing proportion of 10:1 between the acryl base and the synthetic agent, which is 10% of synthetic agent or components with polyester and 90% of the acryl base or carboxyl- and tertiary amino containing polyacrylate, for improving stress-resistance, elasticity, water or steam resistance and clearcoat (col. 2, lines 36-52).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Yamaguchi (US6020866A) discloses method and display panel for displaying color image with heating and cooling means.
- Parker (US5825174A) discloses a temperature responsive battery tester with thermochromic display.
- Chivian et al. (US3831165) disclose an apparatus and method for affecting the contrast of thermochromic displays.

Art Unit: 2871

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SIKES L WILLIAM can be reached on (703) 308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8178 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN
Examiner
Art Unit 2871

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August 29, 2002

TOANTON
PRIMARY EXAMINER